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MEMORANDUM OF AGREEMENT BETWEEN THE DEPARTMENT OF DEFENSE (AIR FORCE) AND THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION FOR A COMBINED NASA AND DOD RESEARCH AND DEVELOPMENT SPACEFLIGHT

1. PURPOSE: This Memorandum of Agreement (MOA) provides policy for the management of a joint program for a satellite to accomplish both a radiation effects and chemical release space mission. The radiation effects mission is a Department of Defense (DOD) research and development project managed by the Space Test Program (STP). The chemical release mission is a National Aeronautics and Space Administration (NASA) research project managed by the Marshall Space Flight Center (MSFC). The joint DOD and NASA efforts shall be known as the Combined Release and Radiation Effects Satellite (CRRES) Program.

2. BACKGROUND: MSFC awarded Contract NAS8-34025 to Ball Aerospace Systems Division (Ball) on September 16, 1980, for design and development of the Chemical Release Module Facility (CRMF). By telegram dated March 5, 1981, MSFC notified Ball that contract NAS8-34025 was to be terminated. This was a termination for convenience of the government due to congressional cutbacks of NASA's budget. Subsequently, during April and May of 1982, correspondence between the Secretary of the Air Force and the Deputy Administrator of NASA established that both the Air Force and NASA were interested in combining the Chemical Release Module Facility and the Radiation Effects Mission into a jointly sponsored CRRES mission.

3. SCOPE: This MOA establishes the responsibilities of DOD and NASA for the development and integration of CRRES and for its launch on the Space Transportation System (STS) and shall become effective on the latest date of the DOD (AF) and NASA signatures. This MOA will be reviewed annually and amended or terminated by the mutual agreement of the signatories. The detailed mission plan will be set forth in a mutually agreed upon CRRES Program Plan to be developed jointly by STP and MSFC. This agreement is not a funding document for the purpose of incurring or recording NASA and DOD (AF) obligations. Such obligating documents shall be separately executed through regular agency procedures.

4. POLICY AND PRINCIPLES:

4.1 Legal Authority: The NASA and DOD (AF) authority for entering into this agreement is 42 U.S.C. 2473 (c) (5) and (6).

4.2 Sub-agreements/Delegation of Authority:

a. This MOA provides the basis for existing and future sub-agreements between the NASA and DOD organizations. These sub-agreements will further delineate CRRES development, acquisition, integration, logistics, operations, data reduction, training, and the related technical and financial roles and responsibilities for each agency. Sub-agreements may be added or deleted as mutually agreed upon by both agencies.

b. Delegation of approval authority within each agency will be established and authenticated at an organizational level no higher than that required to commit to all the provisions called for in the sub-agreements.

4.3 Definitions:

a. CRRES Development - design, fabrication and test of the CRRES satellite and supporting hardware and software.

b. CRRES Program - includes all government and contracted activity relating to the CRRES flight.

c. CRRES Mission - the operation of CRRES including collection and analyses of resulting data and the publication of scientific findings.

d. Program Office - A level of management above the Project Office. Responsible for identifying and consolidating CRRES mission goals and objectives; establishing policy, overall technical requirements, program milestones, and overall mission priorities; approving plans, overall designs, and contractual documents; allocating funds to insure successful development of the CRRES satellite and integration of NASA and DOD experiments; and planning and conducting orbital operations.

e. Project Office - A level of management above the contractor. Responsible for implementing NASA science, technical and mission requirements. Responsible to the Program Office for all activities relative to the CRRES contract and for meeting development, integration, and operation requirements. Identifies STS integration requirements and manages overall activities related to STS integration, launch base processing and pre-launch operations.

4.4 Organizational Roles: STP shall be designated Program Office for the CRRES program with responsibilities identified in the CRRES subordinate agreement and program plan. NASA MSFC shall be designated Project Office for this mission

with specific responsibilities as identified in the CRRES subordinate agreement and program plan.

4.5 Management Oversight: Day-to-day program activities will be coordinated and managed by the respective Program and Project Managers. Higher level management within NASA and DOD will be kept informed of program status and/or issues through normal internal reporting procedures. To provide a broader overview of requirements, the Director STP, the NASA CRRES Program Manager, NASA program Scientist and others at the senior management level will attend and participate as desired in formal program milestone reviews such as Preliminary Design Review (PDR), Critical Design Review (CDR), Flight Readiness Review (FRR), STS Integration Reviews, and similar major reviews where program decisions or guidance are likely to be required. At any intermediate point in the program when an issue of a substantial nature must be resolved, a meeting of the appropriate senior managers will be convened to establish a mutually agreed to course of action.

4.6 CRRES Program Plan: The CRRES Program Plan, a document subordinate to this MOA, shall define the requirements for the CRRES mission. This plan, developed and approved jointly by the Program and Project Offices, will serve as the basic master plan for the program. The plan as a minimum shall cite CRRES program authorization documents; define the mission objectives, operational concept, space and ground segments of the mission including instruments; establish implementation plans including procurements, program schedule and milestones, and financial, manpower, and facility resource needs; define CRRES system engineering relationships, logistics, operations, security, training and test concepts; and identify reporting requirements including preliminary, critical and acceptance reviews. Included as an attachment to the Program Plan shall be a CRRES Project Plan, developed by MSFC and approved by the NASA Associate Administrator for Space Science and Applications, which will define the NASA portion of the program and identify the NASA resources committed to the program. Also included as an attachment to the Program Plan shall be a CRRES Spaceflight Plan, developed by STP and approved by HQ USAF/RDS, which will define the DOD (AF) portion of the program and identify the DOD resources committed to the program. The Program Plan will be distributed to HQ AFSC, HQ USAF, HQ NASA and other key program oversight or management organizations. Financial portions of the plan will be available for USAF and NASA use with release to other individuals or organizations only in accordance with the provisions of the Freedom of Information Act.

4.7 STS Integration: Since it is intended to integrate CRRES on a NASA mission, NASA procedures for STS documentation safety, and integration will be

4.8 Financial Policy: DOD (AF) and NASA will share costs for the CRRES mission in accordance with specific responsibilities stated in paragraph 6. The DOD and NASA will jointly participate in the definition of a complete mission baseline which consists, in part of the CRRES Interface Control Document (ICD) and flight and ground operations requirements documents. Thereafter, changes which affect the baseline established by these documents and incur increased cost shall be funded by the agency causing the increased cost.

4.9 Public Information: Responsibility and authority for the release of public information on the CRRES mission is reserved to NASA for the chemical release portion of the mission and to DOD for the radiation effects portion of the mission. Each party will coordinate any public information release on the CRRES program with the other party prior to release of the information.

4.10 Accidents: Both parties agree, in the event of an accident, to cooperate fully in investigations and attempts to determine cause, corrections, and other necessary actions within their respective agency regulations and contractual provisions.

5. SECURITY: The CRRES mission is presently unclassified. Changes in classification, if any, subsequent to the signatures of this MOA shall be implemented in accordance with paragraph 4.8 as a DOD change in requirements.

6. RESPONSIBILITIES:

6.1 DOD (AF) agrees to:

a. Fund for continued development of the CRRES satellite and chemical release hardware and canisters through completion, launch base pre-delivery test and verification operations, and delivery to NASA for Shuttle integration including funds for chemical release hardware and canisters.

b. Use the P80-1 cradle and aft flight deck control panel and such other previously developed and space qualified equipment, if available, which will lower the total cost to the government.

c. Provide Air Force Satellite Control Facility POCC and MCC support for mission operations.

d. Fund CRRES on-orbit operations and services by the contractor, including post flight analysis requested by DOD.

e. Fund training of the STS crew on the objectives and procedures unique to the DOD experiments.

f. Fund STP approved STS nonstandard services generated by DOD requirements.

g. Provide DOD experiments for CRRES and funding for their integration, test, and data analysis.

h. Fund DOD requirement changes which impact the costs of CRRES development, test, and/or integration.

i. Provide information to NASA on what is learned from the radiation experiments.

j. Obtain NASA HQ concurrence on all Program Office decisions or directions which could affect NASA costs or science objectives.

k. Assume full responsibility for the operation and control of the CRRES spacecraft following the successful achievement of the final DOD elliptical orbit.

6.2 NASA agrees to:

a. Provide existing CRMF produced products, including hardware drawings, and alternative studies.

b. Fund all chemical release scientific investigations including chemicals, but exclusive of on-board hardware and canisters.

c. Fund manpower and Institutional Management Support (IMS) charges at Marshall Space Flight Center for carrying out the CRRES mission including post-flight analysis of the chemical release experiments.

d. Fund shuttle launch and standard shuttle integration and preparation activities including crew preparation activities.

e. Fund all POCC support activities at MSFC for the chemical release portion of the mission including a tie-line to the Air Force Satellite Control Facility if required.

f. Provide information to DOD on what is learned from the chemical release experiments.

g. Obtain Program Office concurrence on all NASA decisions or directions which could affect DOD costs or science objectives.

h. Pass all responsibility for the operation and control of the CRRES spacecraft to the DOD (AF) after the successful achievement of the final DOD orbit. At this time all NASA chemicals will have been released and no further active NASA involvement is anticipated.

7. AGREEMENT SIGNATURES: This agreement is effective upon the date of the latest signature below. Changes or cancellation of this agreement may be made only by mutual consent of the signatories or their successors. All funding commitments are subject to the availability of appropriations at the DOD (AF) and NASA Headquarters level.

C. W. Cook, Deputy Assistant Secretary of the Air Force, Space Plans and Policy

Sept. 2, 1983
Date

B. I. Edelson, National Aeronautics and Space Administration 12/27/82 Rev. 9/14/83

9/16/83
Date

J. A. Abrahamson, National Aeronautics and Space Administration 1/18/83 Rev. 2/16/83